



Creative group decision making for sustainable transport development

Leleur, Steen; Gudmundsson, Henrik; Barfod, Michael Bruhn; Pryn, Marie Ridley

Publication date:
2015

Document Version
Publisher's PDF, also known as Version of record

[Link back to DTU Orbit](#)

Citation (APA):
Leleur, S., Gudmundsson, H., Barfod, M. B., & Pryn, M. R. (2015). *Creative group decision making for sustainable transport development*. Abstract from Transportation for Sustainability 2015, Washington, D.C, District of Columbia, United States.

General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

Creative group decision making for sustainable transport development

Steen Leleur*, Henrik Gudmundsson, Michael Bruhn Barfod, Marie Ridley Pryn

* Corresponding presenter

Department of Transport,
Technical University of Denmark (DTU)
Build. 115, DTU, DK 2800 Kgs. Lyngby
Denmark

sl@transport.dtu.dk, hgu@transport.dtu.dk, mbb@transport.dtu.dk, mapry@transport.dtu.dk

Keywords: Sustainability, group decision making, transport investments, comprehensive assessment, systemic approach, stakeholder involvement

Abstract

Sustainable transport development is on the agenda all over the world but only limited research has been carried out about how national transport planning could contribute to pursuing and supporting such a development. SUSTAIN 2012-16 is a Danish research project with international partners from UK, U.S.A. and Australia with the aim of contributing to such research by building a framework expanded by the three interlinked domains of sustainability, institutions and tools.

The present paper stems from the SUSTAIN research on tools and on the possible role that group decision making can have in addressing the complex planning problem of achieving sustainable transport. As regards assessment of transport investments in the context of a desired sustainable development, the SUSTAIN research has recognized that there is a need to adopt more comprehensive methodology than is the case with the use of cost-benefit methodology, which is seen as more or less *the* assessment methodology in conventional national transport planning. After having introduced SUSTAIN and the purpose of the paper in the introductory Section 1, the following Section 2 treats sustainability in transport planning seen respectively top-down and bottom-up. Top-down is representative of achieving overall targets with regard to different indicators, whereas bottom-up represents the role that sustainability thinking can have in ongoing transport decision making where decisions need to be taken all the time. If these can be made transparent in a group process as regards their different consequences and the sustainability impact of each decision alternative, there is a potential of ad hoc contributing to a sustainable transport development. The group process is sometimes referred to as a decision conference and should be formed by representatives of relevant stakeholders. The group decision making, guided by a facilitator and supported by an analyst taking care of interactive assessment software, need not lead to an actual decision at the end, but could be thought of as a planning workshop with the purpose of providing decision support to be applied by the de facto decision-makers.

The following Section 3 presents a systemic approach to the group work based on applying five different perspectives, which are: Core Performance (CP), Wider Performance (WP), Fairness (FA), Diversity (DI) and Robustness (RO). By making use of these perspectives in a staged process the assessment problem can be illuminated with regard to a comprehensive range of aspects incl. the economic, social and environmental dimensions that all – in accordance with the Brundtland perception of sustainability – ought to influence the choice of decision alternative. Each perspective is seen as a specific mode of enquiry that dependent on the decision task is of relevance for determining the overall ‘green attractiveness’ of each of the alternatives considered. ‘Green’ is here to be understood in a broad manner so green attractiveness (as a score for each decision alternative e.g. choice of alternative for a planned infrastructure investment) is meant to indicate in an aggregate way the overall contribution of the preferred ‘best’ alternative to the overarching goal of sustainable transport development. With different stakeholder viewpoints represented in the group and with the idea of as a principle always including a Green and Future Generation’s Advocate as one of the stakeholders, the systemic approach, it is argued, makes it possible to focus on the most attractive alternative in this respect. The section furthermore treats the different methods that can be made use of categorized as soft and hard operations research methods.

The next Section 4 gives an example that demonstrates the systemic approach as described above. Afterwards in Section 5 the validity of the described comprehensive assessment is discussed and related, among other things, to various types of cognitive bias with Anchoring, Framing, Focusing and Confirmation being called upon. It is argued that the five different perspectives made use of in the systemic approach generally referred to as systemic planning (SP) may remedy some of the pitfalls caused by cognitive bias, while at the same time the five perspectives of CP, WP, FA, DI and RO are found, when used in an interlinked way, to enhance the creativity of the decision making.

In the final Section 6 about findings it is stated that group processes in the context of systemic planning (SP) and other similar approaches hold a potential of contributing to a sustainable transport development by the way holistic consideration can be given to explicate the ‘green attractiveness’ of each of the actual decision alternatives. The SP approach has been tested on a number of cases and is undergoing further development as part of the SUSTAIN research project.